Problems in the X-Ray Diagnosis of Early Cancer*

KENNETH S. DAVIS, M.D., *Los Angeles*

THE roentgenologist and the internist cannot view with complacency the fact that 75 per cent of patients with gastric cancer come to the surgeon too late for successful operation. There are several reasons for this.

First, the growth may be in a silent area of the stomach, remaining asymptomatic until the lesion has reached an inoperable stage.

Second, the cancer may be of such a malignant nature that it spreads very early to the neighboring lymph nodes and organs.

Third, delay in diagnosis due to the difficulties involved in differentiating between benign and malignant lesions of the stomach. This is especially true in those borderline cases in which the final expression of opinion should be in the hands of the tissue pathologist. The surgeon, the internist and, above all, the roentgenologist should remember the fact that the x-ray has no microscopic attachment.

The roentgen findings in carcinoma of the stomach are (1) the filling defect, (2) the palpable mass, (3) absence of peristalsis in the area of involvement, (4) lack of normal flexibility of the stomach wall, (5) alteration from normal in the stomach mucosa, and (6) disturbances in the motility of barium through the stomach.

The roentgen diagnosis of operable cancer simply means that the lesion probably is resectable. This is determined by the extent of the growth and its location, also by the mobility or fixation of the mass. The latter usually indicates its extension beyond the stomach wall. The presence of intra-abdominal metastasis cannot be determined by the roentgenologist.

Persistence on the part of the roentgenologist is important, especially in the presence of suspicious clinical symptoms and a final roentgen diagnosis of normal stomach should never be made until repeated studies have been done.

In the event of doubtful or indeterminate roentgen findings, and even with negative findings, in suspicious cases the stomach should be inspected by a gastroscopist.

Of major importance in this discussion are those cases in which the cancerous lesion develops on a previously diseased mucous membrane. Usually in these cases the patient has had gastric complaints for some time before the cancer has developed and in some of the cases the lesion may remain localized for several months or even years.

There are three separate groups of clinical entities on the soil of which cancer develops: (1) gastritis, (2) polyps, and (3) gastric ulcer.

1. *Gastritis.* It is in this group of cases that gastroscopy is of fundamental importance and the roentgen findings of little significance unless a fairly advanced cancer is present. Roentgen studies may show thickening of the gastric rugae with deposits of islands of barium, varying in size and shape. Roentgen evidence of stiffening of the stomach wall and absence of peristalsis in the area of involvement indicate probable malignancy.

2. *Polyps.* There are two types of polyps: The congenital and the acquired. The congenital may be single or multiple and pedunculated. They appear on the x-ray film as negative circular shadows. Of greater importance from the standpoint of the development of cancer is the acquired type of polyp which originates on the basis of gastritis. Gastroscopy and biopsy are the conclusive diagnostic methods in these cases.

3. *Gastric Ulcer.* Two types of malignant gastric lesions may masquerade as chronic benign ulcer. One is the small ulcerating carcinoma, and the other the carcinomatous ulcer. The latter is an ulcer with no evidence of tumor formation seen on the x-ray but which, on microscopic examination, proves to be a cancer. If the niche of the ulcer is large, if there is an absence of peristalsis and the adjacent rugae are obliterated, or if the margins of the niche have an irregular profile, the roentgenologist must consider the lesion as potentially malignant. In these cases the radiologist will express an opinion only on the physical characteristics of the lesion.

In ulcerating carcinoma, the cavity produced by the ulceration is within the confines of the gastric lumen. If the meniscus sign as described by Corman can be demonstrated, the lesion in most cases proves to be malignant.

St. Vincent's Hospital, Los Angeles.

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